**Lesson Plan**

**Mathematics**

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| **Week** | **Theory/Practical** | |
| **Lecture Day** | **Topic Including(assignment/Test)** |
| **Ist** | **1** | Introduction to syllabus and evaluation scheme |
| **2** | **Unit1 :-Algebra** **Complex Numbers** Definition of Complex Number, Real and Imaginary Parts of Complex Numbers |
| **3** | Polar and Cartesian form and their interconversion |
| **4** | Conjugate of Complex Number, Modulus and Amplitude |
| **IInd** | **1** | Addition Subtraction of Complex Numbers |
| **2** | Multiplication and Division |
| **3** | Revision of Complex Numbers |
| **4** | **Logarithm** Logrithm and their basic property |
| **IIIrd** | **1** | Logrithm and their basic property |
| **2** | Revision of Logarithm |
| **3** | **Unit2:-Binomial Theorem Permutation and Combination** Meaning of nPr and nCr |
| **4** | Examples basis on nPr and nCr |
| **IVth** | **1** | **Binomial Theorem** Binomial theorem for positive integral index without proof |
| **2** | Expansion and General form of Binomial Theorem |
| **3** | Binomial theorem for any index without proof expansion upto three terms |
| **4** | Binomial theorem for any index without proof expansion upto three terms |
| **Vth** | **1** | First Binomial Approximation with application engineering problem |
| **2** | Revision of Binomial Theorem |
| **3** | **Determinant and Matrices** Evaluation of Determinants (upto second order) |
| **4** | Solution of Equation upto 2 unknown by Cramer’s rule |
| **VIth** | **1** | First Sessional Test(Tentative) |
| **2** | First Sessional Test(Tentative) |
| **3** | First Sessional Test(Tentative) |
| **4** | Definition of Matrices and its types |
| **VIIth** | **1** | Addition and Subtraction of Matrices (upto second order) |
| **2** | Multiplication of Matrices (upto second order) |
| **3** | Revision of Determinants and Matrices |
| **4** | **Unit3:- Trignometry** Concept of angle ,Measurement of angle in degree , grades, radians |
| **VIIIth** | **1** | Interconversion of Degree ,grade ,and Radian |
| **2** | T-ratios of Allied Angles(without proof) |
| **3** | Sum,Difference formulae and their applications(without proof) |
| **4** | Product Formulae(Transformation of Product to Sum,Difference and vice versa) |
| **IXth** | **1** | Revision of Trignometrysums |
| **2** | Application of Trignometric terms in Engineering problem such as to find an angle of elevation,Height ,Distance etc., |
| **3** | Application of Trignometric terms in Engineering problem such as to find an angle of elevation,Height ,Distance etc., |
| **4** | Revision of Heights and Distance Sums |
| **Xth** | **1** | **Unit4:- Co ordinate Geometry**  Distance between two points |
| **2** | Mid Point Formulae ,Centroid of vertices of a triangle |
| **3** | Slope of line |
| **4** | Equation of straight line in various standard forms(without proof) |
| **XIth** | **1** | Second Sessional Test(Tentative) |
| **2** | Second Sessional Test(Tentative) |
| **3** | Second Sessional Test(Tentative) |
| **4** | Slope intercept form , intercept form , one point form |
| **XIIth** | **1** | Two point form ,Symmetric form ,Normal form and General form of a straight line |
| **2** | Intersection of two straight lines |
| **3** | Concurrency of lines, Angle between two straight lines |
| **4** | Parallel and Perpendicular lines, Perpendicular distance formula |
| **XIIIth** | **1** | Conversion of general form of equation to various forms |
| **2** | Revision of Straight lines |
| **3** | **Unit5:- Geometry of Circles and softwares**  Introduction to circles :-General equation of circle and its characteristics |
| **4** | To find equation of circle given centre and radius |
| **XIVth** | **1** | To find equation of circle given three points lying on it. |
| **2** | To find equation of circle given coordinates of end points of a diameter. |
| **3** | **MAT Lab or SciLab software** Theoretical introduction of MAT LAB or SciLab |
| **4** | Simple calculator(Addition and subtraction of value – Trignometry and inverse Trignometry function)/General Practice |
| **XVth** | **1** | Simple calculator(Addition and subtraction of value – Trignometry and inverse Trignometry function)/General Practice |
| **2** | Third Sessional Test(Tentative) |
| **3** | Third Sessional Test(Tentative) |
| **4** | Third Sessional Test(Tentative) |
| **XVIth** | **1** | Revision of Syllabus |
| **2** | Revision of Syllabus |
| **3** | Discussion of Assignments |
| **4** | Discussion of Previous Papers |